

SCOPING DOCUMENT 1

BLUE LAKE HYDROELECTRIC PROJECT

FERC No. 2230

Prepared By:

City and Borough of Sitka Electric Department

105 Jarvis Street
Sitka, AK, 98358

September, 2003

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SCOPING DOCUMENT 1

BLUE LAKE HYDROELECTRIC PROJECT RELICENSING

FERC No. 2230

City and Borough of Sitka Electric Department

Sitka, AK

September, 2003

INTRODUCTION AND BACKGROUND

BACKGROUND

General

The City and Borough of Sitka, Alaska (“City”, “Licensee”) is in the process of relicensing the 7.5 megawatt (mw) Blue Lake hydroelectric project (“Project”), Federal Energy Regulatory Commission (FERC) No. 2230, near Sitka, Alaska. The City holds a fifty-year license (the “original license”) from the FERC to operate the Project. The current license became effective on April 4, 1958, and expires on March 31, 2008. The FERC regulations require that the City submit an application for new license (“Application”) no later than March 31, 2006, or two years prior to the existing license expiration. This document is one of a series of information and decision documents the City is required to prepare and distribute during the relicensing process.

While the Project’s FERC license is held by the City and Borough of Sitka, responsibility for it’s day-to-day operation and the relicensing process reside with the City and Borough of Sitka Electric Department, a regulated municipal utility.

The exact name, business address and telephone number of the Licensee is:

City & Borough of Sitka
100 Lincoln Street
Sitka, Alaska, 99835
Phone: 907-747-3294

The exact name, business address and contact numbers of the person authorized to act as agent for the Licensee is:

City & Borough of Sitka, Electric Department
Attn: Charles Walls, Utility Director
105 Jarvis Street

Sitka, Alaska 99835
Phone: 907-747-6633
Fax: 907-747-3208

The Relicensing Process to Date.

The relicensing process has been active for several years including the following activities:

- Early consultation meetings between the City and Alaska State and Federal resource agencies;
- Preliminary study planning meetings and planning leading to Sawmill Creek fisheries surveys conducted from 2000 through the time of this document; Fisheries reports (including Wolfe, 2002) are available through the contact address on page 5;
- Notification of Intent (NOI) to relicense the project, submitted to FERC on November 1, 2002;
- Distribution of an Initial Consultation Document (ICD, City and Borough of Sitka, 2002) describing the Project, the relicensing process and preliminary environmental information, on November 15, 2002 (The ICD contains detailed descriptions of existing resources, expected impacts and environmental studies, as known at the time of writing, and is a good source of background information);
- Initial Consultation Meetings (a technical agency meeting and a public meeting) and a site visit held in Sitka and at the Project site on December 17 and 18, respectively, 2002;
- Formal study planning for potentially-affected fish and wildlife resources, including distribution of draft fish and wildlife study plans and consultation those plans at an inter-agency meeting held on April 24, 2003, in Juneau;
- Finalized fish and wildlife study plans based on agency comments received during consultation;
- Submission to FERC of a request to utilize the Alternative Licensing Procedures (ALP) for Project relicensing. The ALP is a recently-approved method for relicensing which allows the applicant to prepare certain decision documents before license application, thus saving overall relicensing time (see following section).

All documents, meeting minutes, and submissions from these early relicensing activities are available from the City at the contact address on page 5 of this document and in the Blue Lake Project relicensing website at <http://www.cityofsitka.com>.

Alternative Licensing Process.

Under a recent amendment of the Federal Power Act (FPA), licensees may elect to use the Traditional Licensing Approach or the Alternative Licensing Procedure (ALP). Under the Traditional Approach, all activities and documents required under the National Environmental Policy Act (NEPA) are conducted by the FERC or their contractor after acceptance of the Application for new license. This FERC action may take as long as two years to complete. Under the ALP, the licensee may conduct NEPA Scoping (the public participation process to solicit comments on environmental issues) and may prepare a Preliminary Draft Environmental Assessment (PDEA) (first in a series of EA's) prior to submittal of the Application. This process may save as much as two years, but requires greater licensee time and effort prior to Application submittal.

The City applied to FERC for use of ALP by letter dated August 28, 2003, and expects to have been granted approval to use the process by the time of the Scoping meeting. The stakeholders have been notified of Sitka's request to use the ALP and the FERC must consider all stakeholder comments on that decision prior to approval of the process.

PURPOSE OF THIS SCOPING DOCUMENT

Scoping Document 1 addresses Scoping requirements outlined in the FERC regulations for relicensing and implementing the National Environmental Policy Act (NEPA) of 1969. FERC's NEPA regulations are found in 18 CFR Subchapter W-Revised General Rules, Part 380.

The purposes of NEPA, as stated in the original legislation, **Sec. 2 [42 USC § 4321]**, were, among others: "To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man....."

To carry out this purpose, NEPA authorized the Federal Government "to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources..."

In terms of the Blue Lake project relicensing, NEPA requires the FERC, prior to its preparation of an Environmental Impact Statement (EIS) or Environmental Assessment (EA), to consult with Federal agencies with jurisdiction within the Project area, and with State agencies with expertise in the various potentially-affected resources. This early consultation includes the Scoping process, the primary purpose of which is to solicit, from agencies, the public, Non-Governmental Organizations (NGO's) and Tribe(s)

(collectively, “Stakeholders”) input on existing information and environmental and development-related impact issues.

These requirements shape the relicensing proceedings by placing high priority on inter-agency and Stakeholder collaboration, comprehensive issue identification, incorporation of agency terms and conditions, and preparation of environmental documents which reflect agency jurisdiction, expertise, and resource protection measures.

The purpose of the Scoping process is to:

- identify important environmental and developmental issues related to the proposed project relicensing;
- identify reasonable alternatives that should be evaluated in the Environmental Assessment (EA);
- determine the scope and depth of analysis for project purposes and environmental issues identified for evaluation in the Environmental Assessment; and
- identify issues that do not require detailed analysis.

Two formal documents will result from the Scoping process, Scoping Documents 1 and 2 (SD1 and SD2). All issues raised during the Scoping comment period will be reviewed and decisions made as to the level of analysis needed in the preparation of the EA.

The City will revise SD1 according to comments and additional information received, and will issue SD2. SD2 will outline the results of the Scoping process and will provide the framework for issues and concerns to be addressed in the Preliminary Draft Environmental Assessment (PDEA), to be prepared by the City with agency review and under FERC guidance. A copy of SD2, including a summary of comments and input received during the Scoping process will be distributed to the Participant list.

DATE AND TIME of SCOPING MEETING and SITE VISIT

Scoping Meeting

In addition to written comments solicited by the SD1, the City will hold a Scoping Meeting to discuss issues and to solicit oral comments and viewpoints from meeting participants. The Scoping Meeting is an important part of the NEPA process. All interested individuals, organizations, and agencies are invited to attend the meeting. The meeting time and place is as follows:

Date: Wednesday, October 22, 2003.

Place: Harrigan Centennial Hall, 330 Harbor Drive, Sitka, Alaska

Time: 7:00 PM.

The Scoping meeting will be professionally transcribed or videotaped, and all statements (oral and written) will become part of the public record for the Project relicensing. Individuals participating in the meetings will be asked to clearly identify themselves for the record. Interested parties who choose not to participate or who are unable to attend either Scoping meeting may submit written comments or statements until **November 21, 2003**, that will become part of the public record and the official Project file.

Site Visit

A visit to the Blue Lake Project site is intended to give participants first-hand view of the Project facilities and operations. The time and location of the site visit is as follows:

Date: Thursday, October 23, 2003.

Place: Blue Lake Project Powerhouse

Time: 9:00 am

Those wishing to attend the site visit should notify Dean Orbison at the Project contact address and number(s) below at least 3 days prior to October 23. You may also sign up for the site visit at the Scoping meeting on October 22.

PROCEDURES for SUBMITTING WRITTEN COMMENTS

Written comments must be received at the contact address below, via regular or e-mail at the contact addresses below, **within 30 days after the Scoping meeting, or by November 21, 2003** at the following address(es):

City & Borough of Sitka, Electric Department
Attn: Dean Orbison, Engineering Manager
105 Jarvis Street
Sitka, Alaska 99835
Phone: 907-747-6633
Fax: 907-747-3208
e-mail: dean@cityofsitka.com

Any changes in this contact information will be noticed directly to parties on the mailing list, through announcements in a local newspaper and on the Project relicensing website.

REQUEST FOR INFORMATION

An important aspect of Scoping is information gathering. Participants are asked to provide, either by comment at the Scoping meeting or in separate written material or contact with the City, any information which they believe might add to the existing background on:

- Natural resources in the Project area, including fish, wildlife, vegetation, and water resources;
- Cultural resources in the general vicinity and Project area, including Native American use, historic use or development sites, settlements or artifacts;
- Socio-economic resources in the greater Sitka area and on Baranof island, to include any applicable land-use plans, property status or other relevant facts.

Any information contributed as part of the relicensing will be treated with sensitivity to private property, tribal and spiritual values, and applicable access restrictions.

PROPOSED ACTION and ALTERNATIVES

Descriptions in the following sections are restated from ICD, with the exception of the Project Boundary Map (See Figure 3). Those familiar with the previous descriptions need not review the following in detail.

PROJECT LOCATION and FACILITIES

The Project is located approximately 5 miles east of the City of Sitka, Alaska, on Sawmill Creek (formerly the Medvetcha River). The Project consists of ten major features: the dam; a submerged intake structure; a power conduit; three powerhouses; a switchyard and a primary and two secondary transmission lines (Figures 1 and 2). The Project Boundary Map (Figure 3) shows the FERC-designated boundary around the project features and primary transmission line to Sitka.

Throughout this document, the Project features are discussed relative to their Stream Mile (SM), or the centerline distance on Sawmill Creek upstream from the Creek's mouth at tidewater, as determined from the project map. Reservoir and stream or roadway directions (left or right) are looking downstream or down-road. Elevations are referenced as heights in feet above or below mean low sea level, denoted by the term "El".

PROJECT FEATURES.

Names of project features are in bold type on first reference in this section to introduce project terminology which will be used throughout this document.

Dam

Located at SM 2.7 on Sawmill Creek, the concrete arch **dam** is 211 feet high with a base width of 25 ft and a crest width of 256 ft. The 140 ft wide **spillway** at El 342 is centrally located in the dam, and is sized to transport 14,000 cubic feet per second (cfs). A **release valve**, installed at the base of the dam, is used to release water when the reservoir is below the spillway elevation. The valve capacity is 800 cfs. A natural **plunge pool** is located downstream of the dam, to dissipate energy from the spillway discharge.

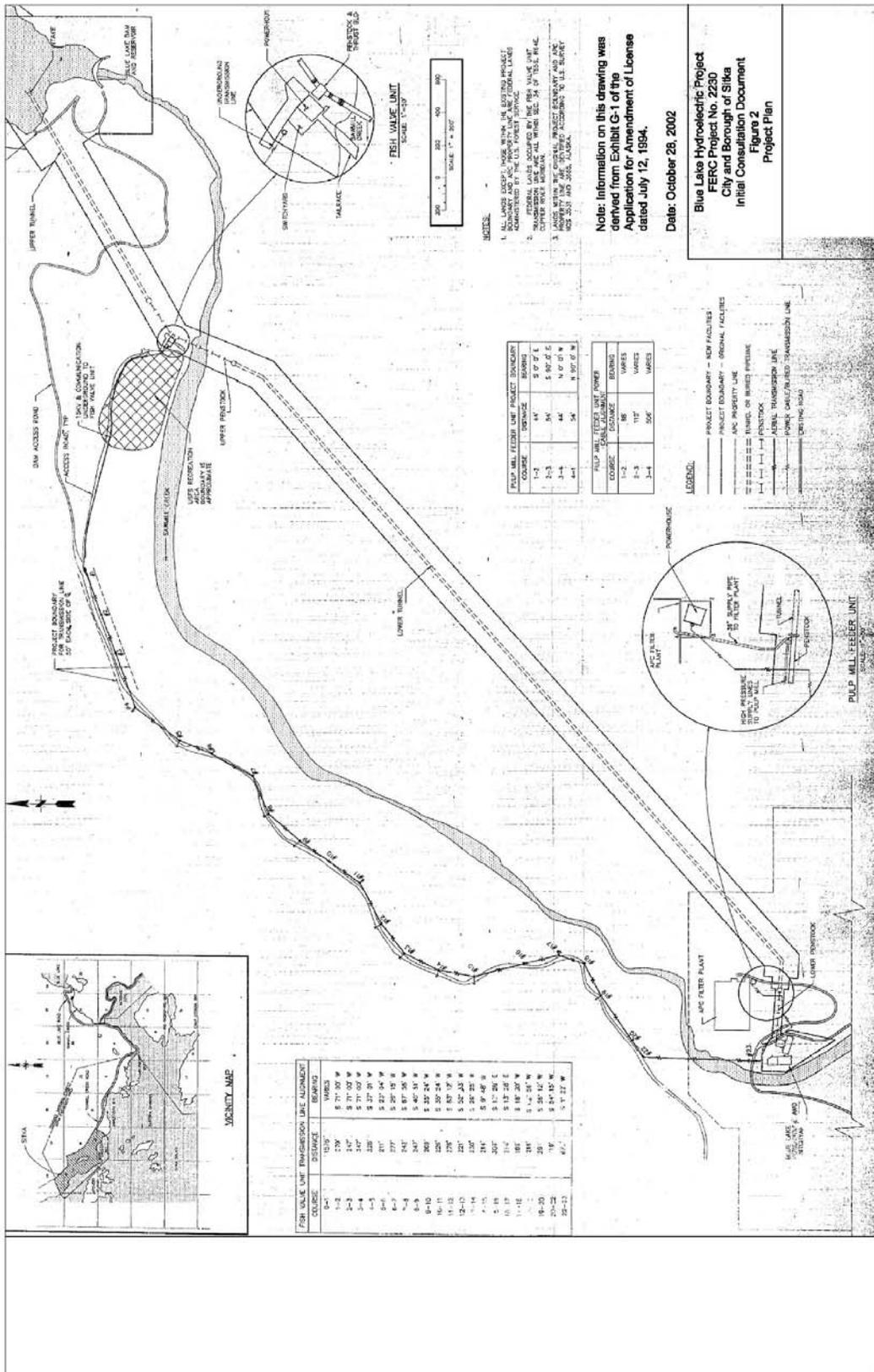




Figure 3. Blue Lake Project FERC Project Boundary (shaded)

Reservoir.

A **reservoir**, known as **Blue Lake Reservoir**, was created when the dam raised the natural Blue Lake water surface from El 208 to El 342 and increased the lake surface area from 490 to 1,225 surface acres. Blue Lake is 3.25 mi long and 0.625 mi in average width. The deepest point is at El minus 126 at a depth of 468 feet below the lake surface at spill elevation. The reservoir has gross storage capacity of 145,200 acre/feet (af) and usable storage of 102,200 af at spill level. A submerged concrete **intake structure** is located approximately 400 feet north of the dam at El 210.

Power Conduit.

A 7,110 ft. long **power conduit** extending from the intake structure to the Blue Lake powerhouse branches to provide water to the various powerhouses and other facilities described below.

The power conduit consists of an **upper tunnel** with an unlined, 11.5 ft. diameter modified horseshoe cross-section extending 1,500 feet from the intake structure to the **upper penstock** on the right side of Sawmill Creek. The upper penstock, an 84 in. diameter, 460 ft. long, steel pipe crosses the stream supported on concrete piers and enters the **lower tunnel** on the left side of Sawmill Creek. The 4,650 ft. lower tunnel has an unlined, 10 ft. diameter modified horseshoe cross-section and extends to the **lower penstock**.

The lower penstock, an 84 in. diameter, 500 ft. long, steel pipe, has two taps immediately below the lower tunnel portal. A 36" tap supplies water to the Pulp Mill Feeder Unit and an 24" tap supplies water to the Sawmill Cove Industrial Park (SCIP), site of the former Alaska Pulp Company (APC) mill.

Approximately 90 feet below these two pipes is a 20 in. tap (the "**water supply tap**") leading into the adjacent water treatment plant for municipal water supply. Approximately 50 feet below this tap is an 84 in. butterfly valve which allows shutdown of the main powerhouse and dewatering of the turbines while maintaining water to the Industrial Park and the Water Treatment Plant.

Project Powerhouses.

The project consists of three generating units, including the Blue Lake, Fish Valve Unit and Pulp Mill Feeder Unit powerhouses. The Blue Lake powerhouse is the primary generating unit, and the other two units provide additional generation capacity, as described in detail below.

Blue Lake Powerhouse

The **Blue Lake Powerhouse** is the primary Project generating unit. It is located on the left bank of Sawmill Creek at SM 0.15 and is a 35 ft. X 70 ft. steel superstructure, precast concrete foundation structure housing two horizontal shaft Francis **turbines** each rated at 3000 kilowatt (kW) with provision for future installation of a third unit. The turbines discharge water into the approximately 150 ft long **tailrace** which carries water from the turbines to Sawmill Creek.

The **Blue Lake Switchyard**, located adjacent to the powerhouse, receives generation energy from the Blue Lake powerhouse, the Fish Valve Unit and the Pulp Mill Feeder Unit (described below). The switchyard includes 12.47/4.16 kV and 4 .16/69 kV transformers, with associated bus-work and disconnect switches. Power from the Green Lake Project, FERC No. 2818, another hydroelectric facility owned by the City of Sitka, is also transmitted to the Blue Lake switchyard at 69 kV.

By FERC Order Amending License dated September 6, 1991, the Project was modified to include two additional generating units. These were:

Fish Valve Unit(FVU)

The **FVU**, located at SM 1.14, generates power from flows released for instream purposes through a valve located about 1900 ft. downstream of the dam. It is housed in a concrete powerhouse located approximately 175 feet below the upstream end of the upper penstock on the right side of the stream. A 36 in. diameter wye branch on the upper penstock supplies water to the FVU. An automatic bypass valve opens when the Fish Valve Unit is tripped off-line to maintain the required flow of 50 cfs in the stream at all times. A single Francis turbine spins a generator rated at 670 kW.

Pulp Mill Feeder Unit (PMFU)

The **PMFU** generates power from the water supply to the former Alaska Pulp Corporation (APC) filter plant. Since closure of the APC plant in 1993, the PMFU uses releases for bulk water export and other future uses. The PMFU consists of a 36 in. tee connected to the existing pulp mill feeder pipe and a 36 inch diameter, 24 ft. long penstock from the tee to the generating unit. The single horizontal, Francis turbine spins a generator rated at 870 kW.

Regular PMFU operation was discontinued in 1993 because of shutdown of the APC mill. The unit was returned to regular service in August, 2003.

Transmission Lines

Primary Transmission Line.

A 69 kV **primary transmission line** extends 5 miles from the Blue Lake Switchyard to the Jarvis Street and Marine Street substations in Sitka. The line consists of both H-frame and single pole, wood structures. The transmission line right of way occupies 27 acres of

land. This land is administered by the U.S. Forest Service, the State of Alaska along the Sawmill Creek Highway right of way and private land owners.

Pulp Mill Feeder Unit Transmission Line.

Power from the PMFU is transmitted over a 470 ft. long, underground transmission line to the Blue Lake Powerhouse and connected to the main generation bus.

Fish Valve Unit Transmission Line.

Power from the FVU is transmitted over a 7,700 ft. long transmission line to the Blue Lake switchyard where it is transformed to 4.16 kV and connected to the main generation bus. The first 1,400 feet of the transmission line through the U.S. Forest Service Sawmill Creek recreation area is underground. The remaining portion is overhead.

Access Roads.

The **dam access road** is the USFS road No. 5755 and extends 2.19 miles to the dam from Sawmill Creek Road. Just downstream of the FVU, a **footbridge bridge** crosses Sawmill Creek at SM 1.10. Access to the Blue Lake powerhouse and the PMFU is along a licensee owned road connected to Sawmill Creek Road at mile 5.5; access to the FVU is via USFS road No. 5755. At SM 0.25, the **Blue Lake Powerhouse bridge** crosses Sawmill Creek just upstream of the Blue Lake powerhouse.

PROJECT LANDS

The existing facilities of the Blue Lake Project occupy 812 acres of U.S. lands administered by the Forest Service.

The project lies within U.S. Geological Survey Sitka A-4 and A-5 Quadrangle maps, within the land descriptions presented in Table 1.

Table 1. Land Descriptions of Blue Lake Project Features.

Project Features	Map Locations
Dam, Spillway and Intake Structure	Section 35 of T55S, R64E, Copper River Meridian.
Power Conduit	Sections 34 and 35 of T55S, R64E, Copper River Meridian.

Fish Valve Unit	Section 34 of T55S, R64E, Copper River Meridian.
Pulp Mill Feeder Unit	Section 34 of T55S, R64E, Copper River Meridian.
Blue Lake Powerhouse	Section 34 of T55S, R64E, Copper River Meridian.
Primary Transmission Line	Section 33 & 34 of T55S, R64E, Copper River Meridian; Section 4, 5 and 6 of T56S, R64E, Copper River Meridian; Section 1 of T56S, R63E, Copper River Meridian; Section 35 & 36 of T55S, R63E, Copper River Meridian.

PROJECT HISTORY

The Federal Power Commission (FPC) Order issuing the original license is dated April 4, 1958. Construction began April 30, 1958 and commercial operation commenced July 23, 1961. In 1979, to meet increased electrical demands, the City obtained a license for the Green Lake project (FERC No. 2818), which was constructed in 1982 in the Vodopod River basin approximately 8 miles to the southeast of the Blue Lake project. The Blue Lake and Green Lake Projects operate conjunctively to supply the City's electrical needs.

The original Blue Lake license remains in effect, but with several amendments addressing various additions and upgrades to the original project design and/or operation. The following amendments are described relative to their provisions and respective issuance order dates:

- Due to increased loads and several dry years, an order amending the license to allow the current instream flow releases was issued on September 7, 1977, as described in subsequent sections;
- The construction of the Green Lake project necessitated upgrading of the Blue Lake transmission line capacity from 34.5 kV to 69 kV. The order amending the license for this change is dated June 12, 1980;
- An order was issued on November 15, 1983 to allow the 20" municipal water tap on the penstock.
- An amendment was ordered on September 6, 1991 to increase the Project nameplate capacity from 6000 kW to 7500 kW with the addition of the Fish Valve Unit and the Pulp Mill Feeder Unit (City and Borough of Sitka, 1990).

PROJECT OPERATION

Project Role in Sitka's Electrical System

The Blue Lake Project is operated in conjunction with the Green Lake Project to meet the City's electric demand ("load"). The Blue Lake powerhouse is the control center for Sitka's entire electric system and is manned around the clock. Generally, the Blue Lake Project is operated as a "base-load" resource, that is, at a pre-set generation output. The Green Lake Project is used for "load-following" or at a continually changing generation output to meet the shifting load in addition to Blue Lake generation. Generation is also allocated between the Blue Lake and Green Lake Projects to manage storage levels in the reservoirs. Back-up generation for the hydroelectric system is supplied by four diesel powered electric generators totaling 11.9 mw nameplate capacity.

Blue Lake reservoir levels are determined by two major factors: 1) reservoir inflow, resulting from precipitation and/or snowmelt, and 2) water releases for hydroelectric generation, spill, instream flow needs, municipal water use and water sales. Hydroelectric generation is the largest of these releases, and has the greatest effect on Blue Lake reservoir levels.

Reservoir inflow is highest in summer and fall due to snowmelt and rainfall. During mid-winter, inflow decreases because precipitation is stored as snowpack. Sitka's electrical loads vary during the year due primarily to energy needs for heating. Demand is highest in winter and lowest in summer (Figure 4).

Because electrical load is lowest in summer and early fall, when inflow is highest, reservoir levels generally rise during this period. During winter, increased loads and reduced inflow cause the reservoir level to fall. Often, in early fall during the highest period of precipitation, reservoir levels exceed the height of the dam and water is "spilled" over the spillway at EL 342. Spilling in particularly wet years may last for several months. The reservoir is operated to maintain the highest possible level to maximize generation unless lower levels are desired for maintenance operations. Typically the lowest normal operational level is about El 280.

Project Operation Criteria

The Project is operated according to conditions in the Original FPC License and certain license Amendments (described above) which specify Sawmill Creek streamflows. In addition, the City controls Blue Lake reservoir elevations on a monthly basis to assure adequate storage (in conjunction with the Green Lake Project), flood protection capacity, and maintenance access to the dam and intake, as required.

The City is required, under provisions of the Original license, to release flows for instream purposes ("instream flows") at the FVU, which generates power from these releases. From May through November, the minimum instream flow requirement is 50 (cfs), regardless of reservoir elevation. The license Amendment of 1977 provided that, from December through April, the 50 cfs flow could be reduced if the lake elevation dropped below certain critical levels (Table 2). Since the FVU was installed in 1992, the City has consistently exceeded the minimum Sawmill Creek instream flow requirements.

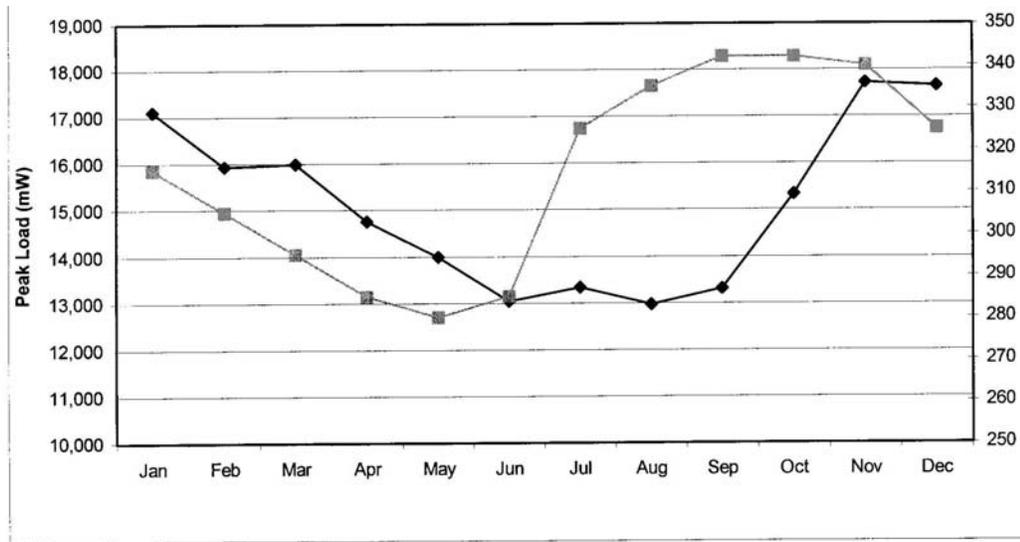


Figure 4. Typical Monthly Peak Loads and Reservoir Elevations, Blue Lake Project.

Table 2. Sawmill Creek minimum Instream Flow requirements allowed at various Blue Lake levels (FERC Order dated September 7, 1977).

Month	Lake Surface Elevation (feet)	Minimum Flow (cfs)
December	336	37
January	324	22
February	311	22
March	295	22
April	274	22

An automatic bypass valve opens when the FVU is not operating to maintain the required flow of 50 cfs in the stream. The reservoir release valve is used to maintain flow in the stream when the power conduit is out of service.

In addition to hydroelectric generation and instream flows, water is also released from Blue Lake reservoir to serve commercial interests, including bottled water and bulk water export operations located at or near the SCIP. The water rights for these operations, held by the City, require that withdrawals for these commercial purposes cease when reservoir elevations fall below the elevations listed in Table 2. This is to assure priority for instream flow releases.

Pulp Mill Feeder Unit operation.

The PMFU was installed to generate power from process water for the APC mill. The mill was closed in 1993 and the PMFU operated only periodically. The PMFU was reactivated in August, 2003. This unit will be used to deliver water for bulk export and other potential uses.

SAWMILL CREEK HYDROLOGY.

Prior to construction of the Blue Lake Project, Sawmill Creek streamflow was characterized by large seasonal variations with high flows due to the Basin’s heavy rainfall and snowmelt, and low flows due to cold periods when the Basin’s water was stored as snow and ice. Since the impoundment, flows below the dam have become more stable because of storage of peak flows and minimum releases which prevent extreme low flows during droughts or very cold periods.

Streamflow data applicable to the Project has been gathered in a variety of locations over the years at the stations and timeframes described below:

The US Geological Survey (USGS) “Original” Gage.

This gage, USGS gage No. 15088000, Sawmill Creek near Sitka, Alaska, was installed in 1921 near the mouth of Sawmill Creek. It was retired upon completion of Blue Lake Dam. Data from this gage generally characterized Sawmill Creek streamflow prior to impoundment. The gage had a 29-year period of record that included water years 1921 and 1922, and 1929 to 1957. Median (the flow exceeded 50% of the time) flow at this gage was 390 cfs for the period of record. Extreme (highest or lowest among hourly recordings) low flow during this period was 9.1 cfs, and extreme high flow was 7,100 cfs (Figures 5 and 6).

Maximum daily flows from this period ranged as high as 5,500 cfs, and minimum low flows fell to as low as 11 cfs. (Table 3). These extremes indicate the effects of heavy storms, cold periods and droughts, without the regulating effects of the reservoir.

Table 3. Maximum and Minimum Average Daily Flows in Sawmill Creek, by Month, for 29-year Period of Record. Original USGS Gage 15088000.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max	2,270	2,410	1,250	1,050	1,640	1,780	2,170	4,940	4,980	5,500	4,430	3,770
Min	24	16	11	14	57	308	311	200	71	84	46	34

“New” USGS Gage, or “Lower Staff Gage”.

In May 2001 the USGS installed a new gage on Sawmill Creek just downstream of the Blue Lake Powerhouse access bridge, approximately 400 feet from mean high tidewater. The USGS has assigned the original gage number, 15088000, to this new gage location. This gage is currently referred to as the **“Lower Staff Gage”** to distinguish it from the Upper Staff Gage described next. Continuous streamflows have been recorded at this gage by the USGS since May 17, 2001, but are not presented here because they are considered provisional by USGS pending a longer period of gage operation.

Upper Staff Gage.

A staff gage was installed on the footbridge near the FVU in 1995 for the stream gaging plan. Under this plan and subsequent orders, this gage is required to be read once every seven days. The Upper Staff Gage readings depict recent Sawmill Creek streamflow in the reaches between the FVU and the Blue Lake powerhouse.

As described in the Project Operation section, the FERC Project license requires a continuous minimum release of 50 cfs from the FVU Powerhouse into Sawmill Creek. From January through April, however, the minimum release may be lowered from 50 cfs to 22 cfs when the surface elevation of Blue Lake reservoir falls below specified levels. The high flow events, which are well above the minimum flow requirements, reflect periods of spill at Blue Lake Dam. During these spill events, flow data from the Upper Staff Gage represents the total of the spill and the FVU releases.

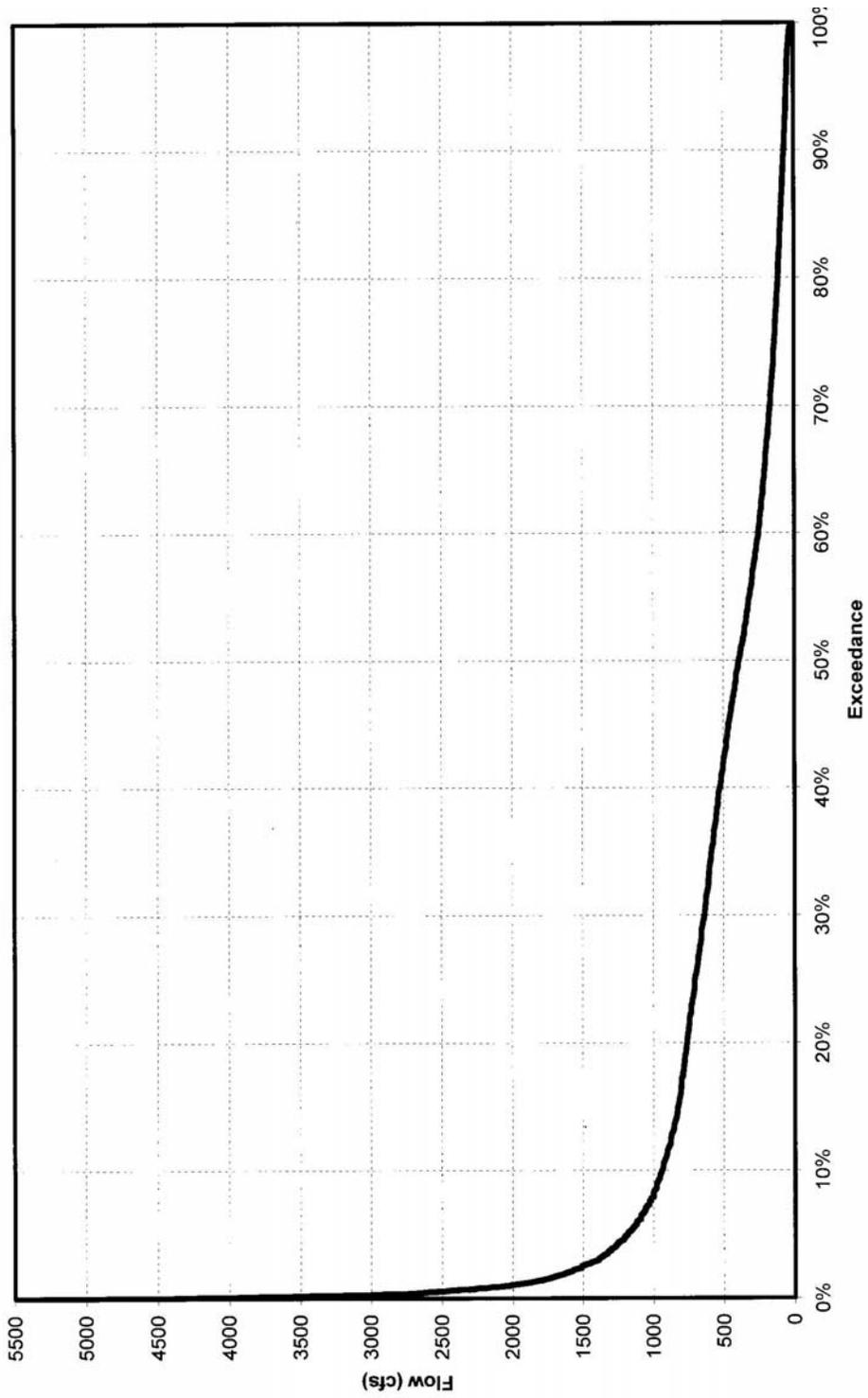


Figure 5. Exceedence Graph for Original USGS Gage, Sawmill Creek Near Sitka, Alaska.

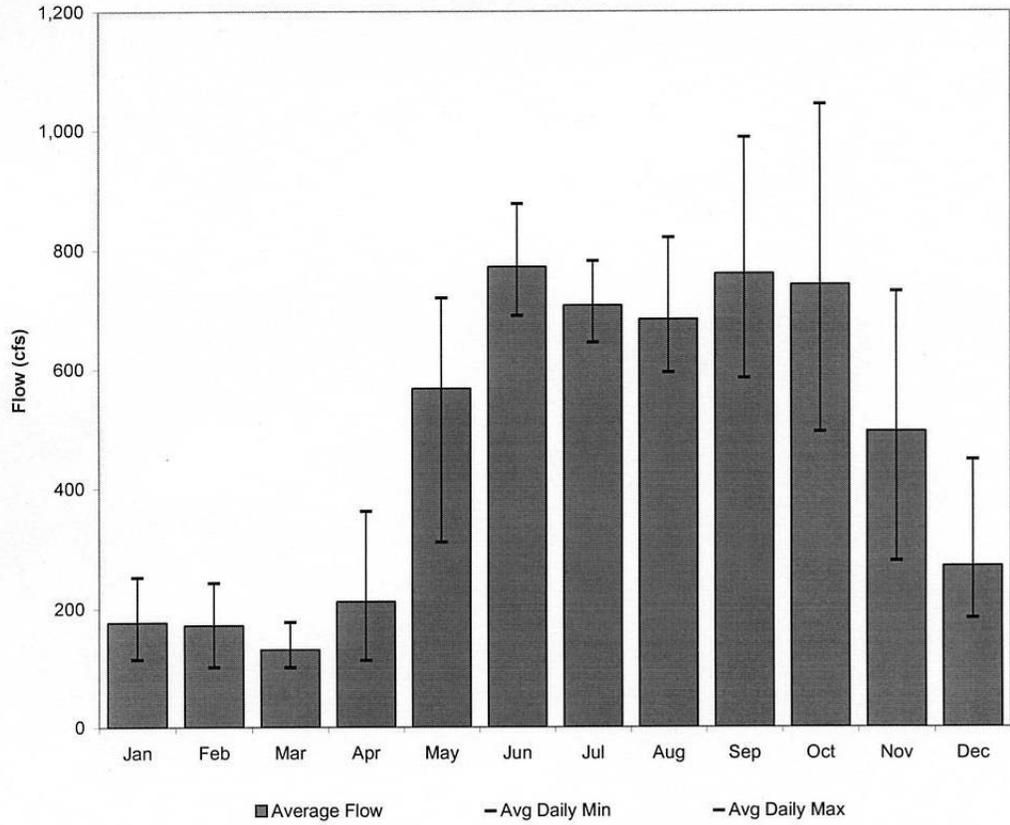


Figure 6. Average, average minimum, and average maximum streamflow, Original USGS Gage, Sawmill Creek near Sitka, Alaska.

EXISTING ENVIRONMENTAL PROTECTION MEASURES

The current project operational constraints include several environmental protection measures. The primary means of protection is via control of Blue Lake lake levels on a seasonal basis, and via implementation of minimum instream flow releases to Sawmill Creek. The various lake level and streamflow requirements have resulted from different actions over the life of the project, and are described in Table 2, above.

PROPOSED PROTECTION AND ENHANCEMENT MEASURES

The City has begun the process of consultation leading to its proposed environmental protection and enhancement measures. As currently envisioned, the primary areas for protection and enhancement relate, as do the current measures, to provision of specified seasonal Sawmill Creek instream flows and minimum and maximum Blue Lake levels. The City recognizes that there is the potential for optimizing Blue Lake storage and release schedules to provide additional water quantity for Sawmill Creek fisheries while meeting the need for adequate reservoir storage capacity, drought protection and dependable generation and municipal water supply.

Beginning in fall, 2003, and continuing through the relicensing process, the City and a selected resource agency sub-group will implement a computer-based method for simulating operations of the Blue Lake-Green Lake electric generation system which will provide outputs including seasonal (or monthly, depending on consultation decisions) lake level(s), Sawmill Creek streamflow and energy generation. The objective of this simulation model system will be to optimize monthly and yearly operations, first to predict potentially-beneficial operating scenarios, then to evaluate a range of alternative operations, and finally to reach agreement on the operation(s) which will become the City's relicensing operational proposal. The same computer-based system used to develop the operational alternatives will be the one used subsequently on which to base real-time project operations.

Other protection and enhancement proposals may include, but not be limited to, those addressing the issues identified for Cultural, Aesthetics, Land Use and Recreational Resources.

PROJECT ALTERNATIVES

The City's Proposed Action

The City proposes to obtain a new license to continue to operate the Blue Lake Project. The City anticipates that specific environmental protection, mitigation, or enhancement (PM&E) measures will be recommended by the ALP participants and that these may be

crafted into a settlement agreement that forms the basis of the proposed action. At this time, no structural or operational modifications or specific resource enhancements have been proposed by the City; therefore, this alternative cannot be defined in detail.

Other Alternatives to be Formulated and Considered

The City proposes to develop alternatives to the proposed action based on agency and public comments during the Scoping process and ongoing consultation. These alternatives will be composed of various PM&E measures. These measures could be adopted by the City for inclusion in the PDEA as the preferred alternative. Issues to be considered during development of alternatives would include:

- 1) Evaluation of the potential for developing a new streamflow release regime based on system operational modeling to optimize storage-release-energy production and fisheries benefits;
- 2) Review of water allocations for the Blue Lake watershed to evaluate various use priorities.

No Action

The No Action Alternative is required under NEPA regulations to reflect how the Project would continue to operate under the terms and conditions of the existing license and amendments, and no new environmental PM&E measures would be implemented. Pursuant to NEPA, this alternative establishes the baseline environmental conditions against which all other “action” alternatives will be compared.

Alternatives Eliminated from Further Study

FERC NEPA implementation regulations require consideration of a full range of reasonable alternatives to the proposed action. The PDEA is expected to consider a number of alternatives. Some of these alternatives are expected to be considered in detail, and others may be eliminated from further evaluation for such reasons as feasibility or reasonableness. At this point, it is not proposed that project retirement or issuance of a non-power license be considered for further detailed evaluation.

Also, during the Initial Consultation Stage, the City discussed an alternative to raise the height of the Project dam to increase generation and operational flexibility. After further consideration of that alternative, the City announced at a study planning meeting held with fish and wildlife agencies in April, 2003, that it was no longer considering raising the dam. All changes in downstream release and Blue Lake levels will be considered based on the current dam height.

RESOURCE ISSUES

Resource issue identification is a very important step in the NEPA and relicensing processes. Issue identification through the Scoping process allows the public and resource agencies to describe and discuss potential impacts which relicensing might

cause. Each issue which remains in the SD2 must be addressed in the subsequent EA's and FERC's Order Issuing New License, if FERC chooses to relicense the project. Issues identified during Scoping may be added or changed, but those in SD2 can neither be added nor changed without consensus among all participants in the Scoping process. It is therefore highly important for all participants to read issues in this document carefully relative to their language and content, and to offer new issues or modifications of the existing issues as you feel necessary.

It is important to understand the concept of "impact baseline" for a hydroelectric project relicensing. The "impact baseline" represents the environmental conditions at the time of the relicensing action. "Effects", then, would relate to those actions which might change, for better or for worse, baseline conditions. "Impacts" would be negative action-related effects on baseline conditions.

For a hydroelectric project relicensing, the FERC has determined, generally, that the "baseline" is the conditions at the time of relicensing, including the existing project features and operations. Therefore, relicensing effects or impacts would only be those associated with changes proposed in the Project features or operations.

Clearly, the Blue Lake Project has effects and impacts related to its current and long-term existence and operation. Under the FERC impact baseline concept, however, the City is not required to mitigate or compensate for these existing or ongoing impacts.

The FERC regulations, however, require that Licensees or Applicants, during relicensing or original licensing, strive to "protect, mitigate and enhance" resource values to the extent possible. In this light, the City recognizes the past and ongoing effects of the Blue Lake project, and includes those effects among resource issues for the purpose of evaluating ways to improve the existing environment through the relicensing process.

Because the City envisions few changes to the project design or operation on relicensing, the list of issues related to those proposals would be short, and the potentials for environmental improvement limited. It is the City's objective, however, to work from a more extensive list of resource issues, many of which relate solely to existing project features or operations, to better examine potentials for protection and enhancement.

Issues in the following sections are listed in relative order of their significance. The order is subjective at this time, however, and very much subject to change based on reviewer comment. While issues with lower significance may require less study or a lower level of treatment, the City must address all issues which remain in the SD2.

FISHERIES

Issue F1. Sawmill Creek Instream Flow. Whether the project-related streamflow in Sawmill Creek affects populations of anadromous and resident fish in that waterway. Under this issue, the City would examine potentials for implementation of a new flow regime which might optimize fish habitat, water storage needs, and electric generation.

Issue F2. Blue Lake Level. Whether Blue Lake surface elevation fluctuations and/or seasonal levels affect resident fish populations in that water body. Changes in lake level may be harmful to fish during certain life stages, such as spawning and rearing, causing stranding, migration impediment, and habitat loss. Under this issue, the City would examine Blue Lake water surface level fluctuations during certain yearly periods, and determine the potential for and costs of minimizing impacts.

Issue F3. Habitat Potential of the “Dewatered” reach. Whether there is significant potential fish habitat in the “dewatered” reach directly downstream of Blue Lake dam, and the extent to which continuous streamflow from dam releases might improve existing fish habitat conditions. Under this issue, the City would examine potential benefits and costs associated with releasing water to the dewatered reach.

Issue F4. Fish Entrainment. Whether the existing Project intake in Blue Lake might be a source of fish mortality due to entrainment of fish during Project operations. Increased water velocities in the area of the active intake might draw fish, particularly those of smaller size, into the intake, causing impingement on the intake features and entrainment into the power conduit, with associated mortality passing through the turbines. Under this issue, the City would examine the likelihood of fish entrainment based on presence or absence of fish in the intake area and other estimates of entrainment likelihood.

Issue F5. Reservoir Woody Debris Storage. Whether the existing dam and reservoir might block the downstream transport of woody debris, thereby depriving Sawmill Creek of stream habitat features. Woody debris is an important element of instream fish habitat and contributes to bank stability, shade and cover. Large dams and diversions often impede downstream contribution of LWD, affecting fish habitat. Under this issue, the City would examine existing throughput of LWD and the need for and costs of enhancement measures.

Issue F6. Reservoir Sediment Storage. Whether the existing dam and reservoir might block downstream transport of sediment, thereby depriving Sawmill Creek of a range of sediment sizes necessary and sufficient to maintain channel configuration and geomorphic process related to fish habitat retention. Under this issue, the City would examine sediment storage and transport potentials, and evaluate the need for and cost of enhancement measures.

Issue F7. Water Release Temperature.

This issue is addressed under the Water Quality and Quantity Section, Issue WQ1, on the following page.

Issue F8. Tailrace Attraction. Whether water velocity in the Project tailrace might serve to attract migrating anadromous fish, thereby delaying their upstream migration in Sawmill Creek. Experience has shown that differential water velocities offer various levels of attraction to migrating fish; increased velocities serve as “keys” to attract fish up

one water course over another. Under this issue, the City would evaluate, through observations, whether anadromous fish concentrate in the tailrace and the effects such concentration might have on anadromous fish migration into Sawmill Creek.

Issue F9. Ramping Rates. Whether short-term (over minutes or hours) fluctuations in streamflow and resulting water level might affect various life-stages of fish in Sawmill Creek. Rapid increases or reductions of water level or velocity have been shown to displace, strand or otherwise stress fish below hydroelectric dams. Under this issue, the City would examine ramping rates associated with current Project operations, determine whether they offer significant potential for improvements, and evaluate costs and benefits of improvement measures.

Issue F10. Draft Tube Injuries. Whether the Blue Lake Powerhouse draft tubes are situated in such a way as to allow for fish passage into the tubes when one or both generating units were shut down. On certain hydroelectric projects, fish have been able to swim up the tubes during shut-down, and were injured on start-up. The City believes that the vertical alignment of the Project draft tubes completely prevents access into the turbines during shut-down. The City does not propose to address this issue in detail at the time of SD1.

Issue F11. Load Rejection. Whether, following a load-rejection, when the generating units trip off, there would be a period of dewatering in Sawmill Creek during the period when no water was flowing through the generators. On certain projects without by-pass valve provisions, short-term dewatering has caused fish mortality in both by-passed reaches and below project powerhouses. The Blue Lake Project is fitted with rejection valves at the powerhouse which preclude the effects of load rejection in terms of dewatering. The City does not propose to address this issue in detail at the time of SD1.

WILDLIFE AND BOTANICAL RESOURCES

Issue W1. Blue Lake Nearshore Habitat Inundation

Whether habitat inundation related to water elevation increase might reduce habitat for such large mammals as Sitka black-tailed deer, goats and small mammals and birds. Several large and small mammal species are known to utilize Blue Lake's shoreline areas and areas along tributaries which feed the Lake. This issue was raised early in the relicensing process when the City had not decided on whether or not to raise the elevation of the Project dam. The City has decided not to raise the dam on relicensing, and changes which result from adoption of different Sawmill Creek streamflow regimes with the current dam height would be minimal and within the current reservoir high water mark. The City therefore does not propose to address this issue in detail at the time of SD1.

Issue W2. Aquatic Mammal Effects of Flow Reduction.

Whether existing instream flows in Sawmill Creek would effect life histories, movement or feeding of aquatic mammals known to utilize the near stream environments. Under this issue, the City would evaluate the extent to which streamflow may affect existing aquatic mammal populations, and, if there are significant effects, seek alternative instream flow regimes which might reduce these effects. Streamflow optimization would be necessary to ensure that impacts and benefits for both fish and wildlife were adequately addressed.

WATER QUALITY AND QUANTITY

Issue WQ1. Effects of Blue Lake Water Temperature on Sawmill Creek Aquatic Resources.

Whether water temperature from Blue Lake releases might affect aquatic resources in Sawmill Creek. The releases draw water from a zone of the lake which is usually colder than it would be were it drawn from the lake surface, or from the surface of the pre-project lake. Under this issue, the City would evaluate Blue Lake dam release temperatures together with Sawmill Creek temperature regimes, and examine potentials for changes in release temperature regimes.

Issue WQ2. Effects of Relicensing on existing Sawmill Creek and Blue Lake Water Rights and Related Requirements.

Whether instream flow or Blue Lake level regimes adopted during relicensing would affect existing permanent and conditional water rights in the Blue Lake basin. The Project and its water distribution system are subject to several water rights issued by the Alaska Department of Natural Resources (ADNR), which relate to either Blue Lake reservoir levels or Sawmill Creek streamflows. The water rights address several important water uses. Adoption of different lake levels or streamflow requirements would entail changes in this water rights and use structure. Under this issue, the City would evaluate the extent to which these changes might affect joint water uses among all permitted users, and the necessity for ADNR to reapportion the Basin's water rights.

CULTURAL RESOURCES

Based on earlier surveys, no cultural resource issues are identified at this time. However, we seek any comments as to potential issues as part of the Scoping process.

LAND USE AND AESTHETICS

Based on current knowledge, there are no existing land use or aesthetics issues. However, we seek any comment on potential land use of aesthetics issues as part of the Scoping process.

SOCIOECONOMICS

Issue SE1. Effects of relicensing-related changes for non-developmental resources on economics, particularly electric rates within the Electric Department's service area, and related effects on Sitka cost of living. An increase in electric rates might effect the overall quality of life in Sitka through cost impacts on both residences and businesses. Under this issue, the City would evaluate the effects, in particular, streamflow and lake level constraints resulting from relicensing on electrical rates.

CUMULATIVE EFFECTS

According to FERC NEPA implementation regulations (§1508.7), an action may cause cumulative impacts on the environment if its impacts overlap in space and/or time with the impacts of other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time to include hydropower and other land and water development activities.

At the time of this document, there are no reasonably foreseeable activities in the Project area. However, one of the purposes of Scoping is to receive input on such possible activities. Readers knowing of other likely actions within the geographic and temporal scopes defined below should include a description of those activities in their comments on SD1.

TEMPORAL SCOPE

Cumulative analyses will include past, present, and future actions and their effects on aesthetic, recreational, fisheries and wildlife resources. Based on the potential 30-year license term for the project, the temporal scope will look 30 years into the future, concentrating on environmental effects from reasonably foreseeable future actions which may be identified during Scoping.

GEOGRAPHIC SCOPE

The geographic scope of analysis for the resources that could be cumulatively affected is defined by the physical limits or boundaries of: 1) the proposed action's effect on the resource; and 2) contributing effects from other hydropower and non-hydropower activities. Since the actions affect the resources differently, the geographic scope for each resource may vary. The exact geographic scope of cumulative effects analysis will be determined through further consultation with resource agencies, and from comments received during Scoping.

APPLICABLE COMPREHENSIVE PLANS

Four primary comprehensive state and federal management plans have been identified at the time of SD1 as having relevance to the Project relicensing. These plans, with their applicable state or federal agencies, are the:

1. City of Sitka Comprehensive Plan (CSCP), City and Borough of Sitka;
2. Sitka Coastal Management Plan, Alaska Department of Natural Resources;
3. Tongass Land Use Management Plan, United States Forest Service, Tongass National Forest, Juneau; and
4. Northern Southeast Area Plan, Alaska Department of Natural Resources.

During the relicensing process, we plan to fully address enforceable policies and conditions of all plans to determine consistency of Project proposals and alternatives with Plan conditions. We seek any input from the applicable agencies or others which might aid in our review of Comprehensive Plans during relicensing.

TRIBAL COMPREHENSIVE PLANS

No applicable plans have been prepared by STA, according to preliminary contact with the Tribe. Again, we request any additional information on Plans which might apply during relicensing.

PROCESS PLAN AND SCHEDULE

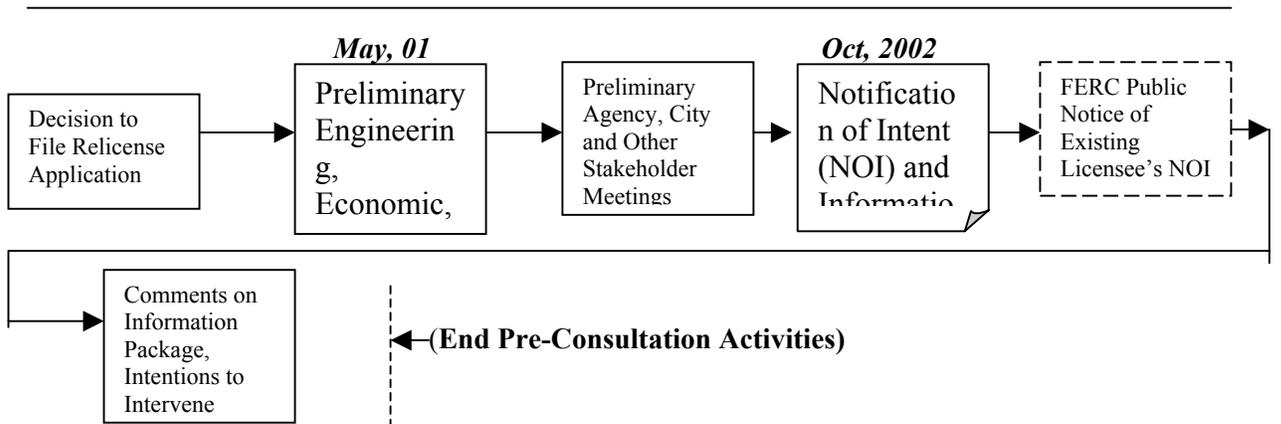
The plan and schedule for the Project relicensing is shown in Figures 7 through 9. This schedule is based on our proposal to use the Alternative Licensing Process (ALP) as described above.

Generally, the schedule is divided into pre-filing (licensee's activities prior to submittal of the final Application) and post-filing (FERC and licensee's activities after Application submittal). The pre-filing period is from October 1, 2002 to March 31, 2006. During this period, the City will consult with agencies, the Sitka Tribe, the public and NGO's to conduct studies, conduct the preliminary NEPA process phases under the ALP, and negotiate recommendations and prepare the final Application.

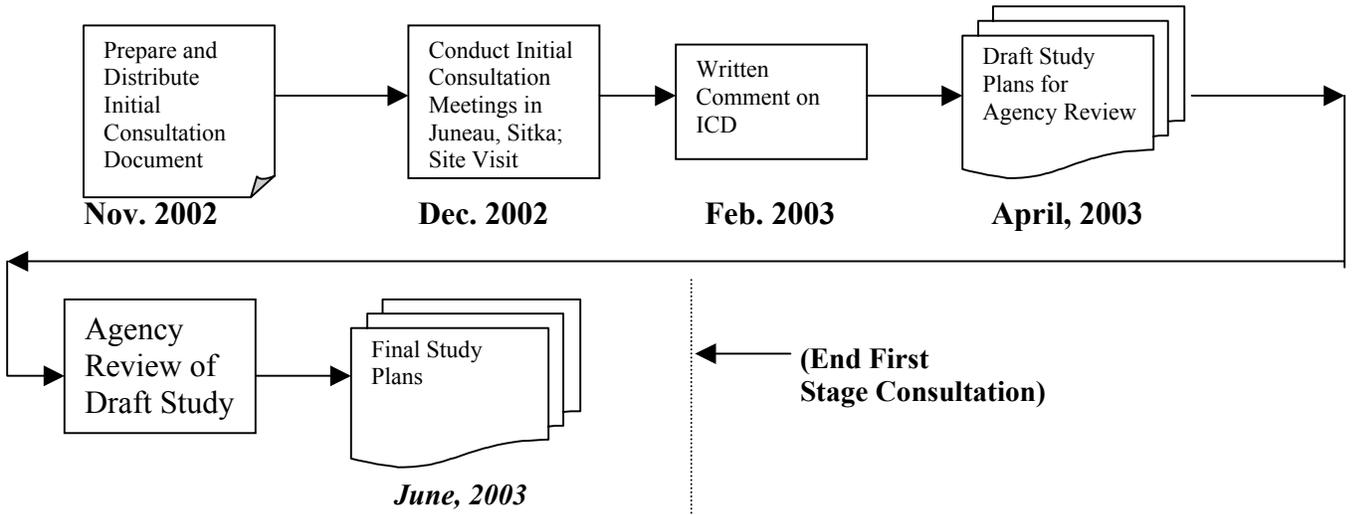
Post-filing activities will extend from April 1, 2006 to issuance of a new license. During the post-filing period, the FERC may request additional information prior to preparation of its own NEPA documents.

Step 1 – Decision to File and Initial Actions.

Pre-Consultation Activities



Step 2 – First Stage Consultation



ALP Process, (May-June, 2003)

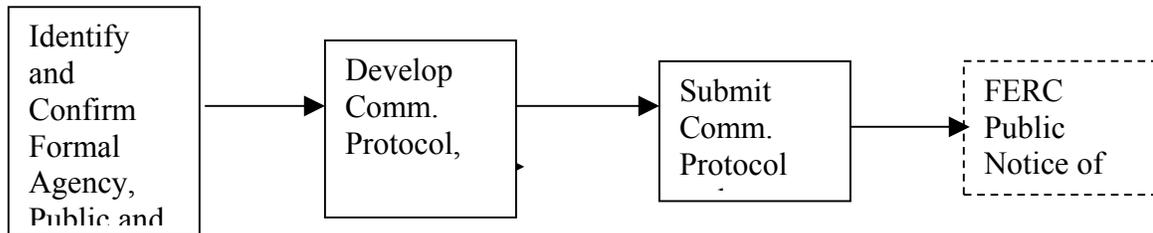


Figure 7. FERC Relicensing Process, Steps 1 and 2

Step 3, Second- and Third-Stage Consultation

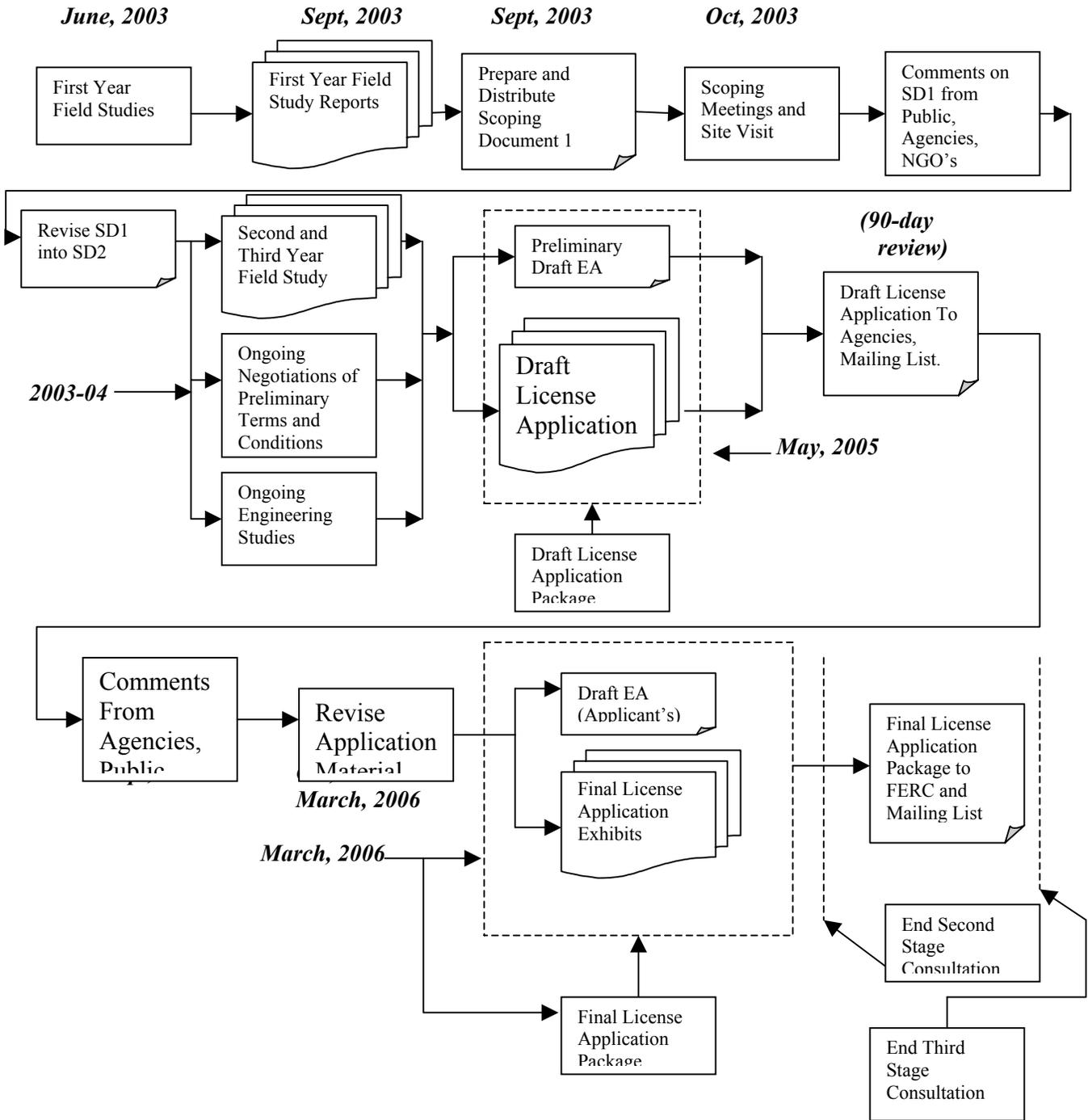


Figure 8. FERC Relicensing Process, Step 3.

Step 4, FERC Actions on License Application.

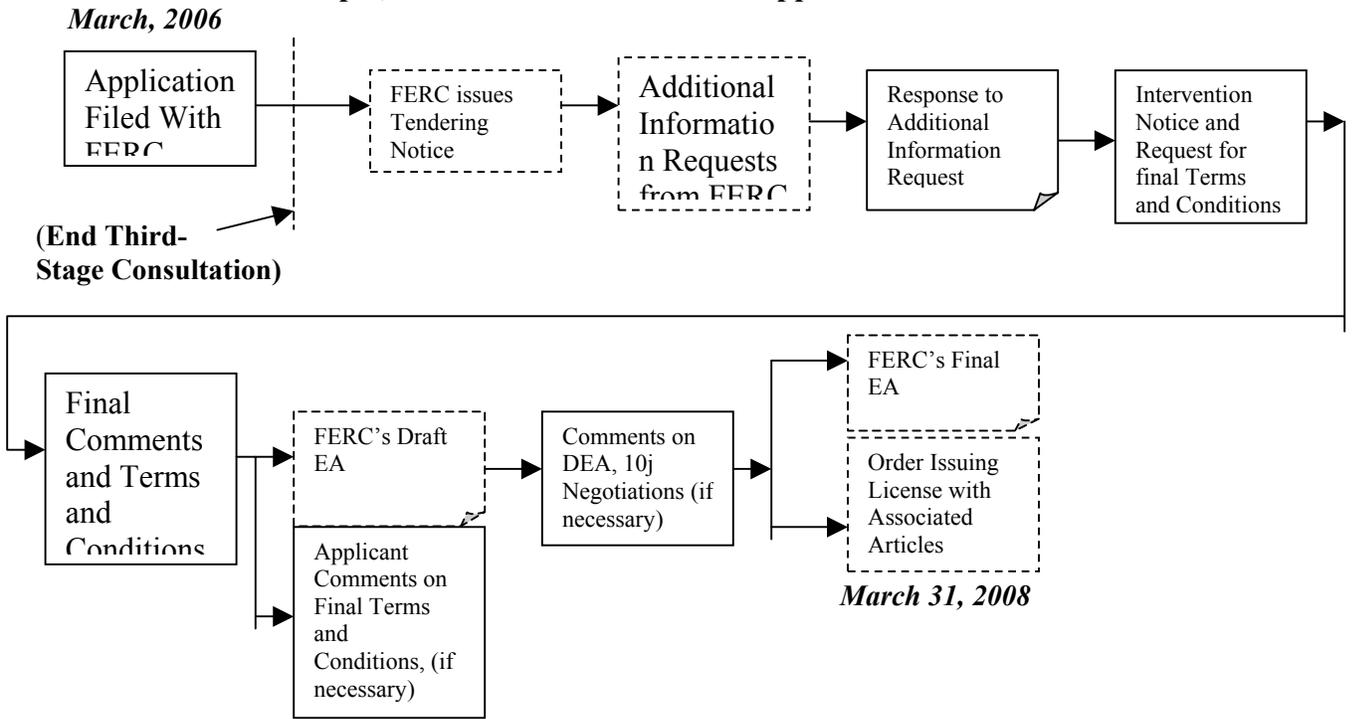


Figure 9. FERC Relicensing Process, Step 4

PRELIMINARY DRAFT EA OUTLINE

The tentative outline for the Blue Lake Project PDEA is shown below. The outline is based on general NEPA guidelines and recent FERC recommendations; the final contents and organization of the PDEA may be revised, depending on input received during Scoping and further consultation.

Cover Sheet

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
af	Acre foot or feet
ALP	Alternative Licensing Process
APC	Alaska Pulp Company
Cfs	Cubic foot or feet per second
CMT	Culturally-Modified tree
EA	Environmental Assessment
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FVU	Fish Valve Unit
FWS	United States Fish and Wildlife Service
HPA	Historic Preservation Act
ICD	Initial Consultation Document
kW	Kilowatt
mgd	Million gallons per day
mw	Megawatt
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NMFS	National Marine Fisheries Service
PJD	Preliminary Jurisdictional Determination
PMFU	Pulp Mill Feeder Unit
SCIP	Sawmill Cove Industrial Park
SHPO	State Historic Preservation Officer
SM	Stream Mile
USFS	United States Forest Service
USGS	United States Geological Survey

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